

## DETAILED ACTION

### ***Allowable Subject Matter***

1. Claims 1-18 and 21-25 are allowed.
2. The following is an examiner's statement of reasons for allowance: The prior art fails to teach or render obvious an electromagnetic valve for a gas cylinder, comprising: a valve body; a threaded portion of the valve body with an external thread, which is screwable into an internal thread on the gas cylinder; a portion of the valve body projecting into the gas cylinder; a shut-off piston; electromagnetic control elements by which the shut-off piston is movable from an open position to a closed position, wherein the valve body for receiving the shut-off piston and the electromagnetic control elements has a cavity which is disposed inside at least one of: the threaded portion and the portion of the valve body projecting into the gas cylinder, and wherein a mouth of the cavity is disposed on a head end of the valve body situated outside of the gas cylinder, and the shut-off piston and the electromagnetic control elements can be inserted into the cavity through the mouth; and a manual shut-off valve for interrupting gas flow from the gas cylinder to the cavity.  
3. Sakaguchi et al. (U.S. Pub. No. 2003/0066836), Grant et al. (U.S. Pat. No. 5,188,017), and Borlund et al. (U.S. Pat. No. 5,452,738) were considered most pertinent to applicant's disclosure.

Sakaguchi et al. and Grant et al. disclose similar electromagnetic valves comprising externally threaded valve bodies with a portion projecting into the gas cylinder, wherein a cavity is disposed inside the threaded portion and the portion of the

valve body projecting into the gas cylinder, and wherein the mouth of the cavity is disposed on a head end of the valve body situated outside of the gas cylinder. Each also disclose a shut-off piston and electromagnetic control elements insertable into the cavity through the mouth. However, neither Sakaguchi nor Grant disclose a manual shut-off valve for interrupting gas flow from the gas cylinder to the cavity.

Borlund et al. disclose a manual shut-off valve for interrupting gas flow from the gas cylinder to the exterior of the valve body, however, does. However, even if Sakaguchi's or Grant's valves were modified to include a manual-shut off valve such as Borlund's, the shut-off valve would be capable of interrupting the flow from the gas cylinder to the cavity. Such a modification to allow such capability would require significant structure change to Sakaguchi's or Grant's valves and would not be an obvious modification.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Pat. Nos. 6,929,028 (Larsen et al.), 5,813,429 (Ohtaka et al.), 7,441,564 (Larsen et al.), 6,557,821 (Girouard et al.) 6,495,032 (Miller et al.), 6,452,099 (Miller et al.), 6,186,168 (Schultz et al.), 6,517,615 (Miller et al.), 6,691,729

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(Takeda et al.), 5,860,884 (Jolliff), 7,309,113 (Carter), 6,390,075 (Yamazaki et al.)

disclose electromagnetic valves with threaded bodies including a cavity for a shut-off piston and electromagnetic control elements.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARINA TIETJEN whose telephone number is (571) 270-5422. The examiner can normally be reached on Mon-Thurs, 9:00AM-5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ROBIN EVANS can be reached on (571) 272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. T./  
Examiner, Art Unit 3753

/John K. Fristoe Jr./  
Primary Examiner, Art Unit 3753